

### Abstract

An invention for polymerizing or crosslinking a prepolymer using a water soluble, thermal polymerization initiator is disclosed. The prepolymer mixed with the initiator is injected or placed into an animal's body, and heat is applied over the site of the injection to polymerize the polymer. This transdermal thermal polymerization system can be used for drug delivery of bioactive agents and in tissue engineering applications in which living cells are delivered.